

Appln. No. 10/753,834
Docket No. 14XZ125897 / GEM-0114

REMARKS / ARGUMENTS

Status of Claims

Claims 1-13 are pending in the application and stand rejected. Claims 3 and 4 would be allowable if rewritten to overcome noted rejections and to include all of the limitations of the base claim and any intervening claims. Applicant appreciates the Examiner's comments regarding the allowability of the noted claims. Applicant has amended Claims 1 and 3-13, leaving Claims 1-13 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Objections to the Claims

Claims 1, 4, 12 and 13, are objected to for reasons relating to informalities.

Applicant traverses this objection for the following reasons.

Applicant has amended the claims to correct for the informalities. No new matter has been added as antecedent support may be found in the application as originally filed.

Regarding Claim 4 specifically, the Examiner remarks that the term "cathode" lacks antecedent basis. Applicant respectfully disagrees as Claim 2, which Claim 4 is dependent upon, includes antecedent support for "cathode".

Accordingly, Applicant respectfully requests reconsideration and withdrawal of these claim objections, which Applicant considers to be traversed.

Rejections Under 35 U.S.C. §112, First Paragraph

Claims 1-13 stand rejected under 35 U.S.C. §112, first paragraph, for reasons relating to enablement. The Examiner comments that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly

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connected, to use the invention commensurate in scope with these claims, and suggests that Claims 1, 12 and 13 should therefor be restricted in scope to X-ray radiation.

Applicant traverses this rejection for the following reasons.

Applicant has amended Claims 1, 12 and 13 as suggested by the Examiner. No new matter has been added as antecedent support may be found in the application as originally filed.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection, which Applicant considers to be traversed.

Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 5-11 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

Applicant traverses this rejection for the following reasons.

Applicant has amended Claims 5-11 in a manner that more particularly points out and distinctly claims the subject matter regarded as the invention. No new matter has been added as antecedent support may be found in the application as originally filed.

Accordingly, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention, defined the claimed subject matter with a reasonable degree of particularity and distinctness, and therefore respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §112, second paragraph, which Applicant considers to be traversed.

Rejections Under 35 U.S.C. §103(a)

Claims 1, 2, 12 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Resnick (U.S. Patent No. 4,775,992, hereinafter Resnick).

Applicant traverses these rejections for the following reasons.

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Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Applicant further submits that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). "[T]o establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant." *In re Werner Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) (citing: *In re Dance*, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984). There must also be a reasonable expectation of success in modifying or combining the prior art, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 USPQ2d 1016, 1023 (Fed. Cir. 1996). And, there must be some degree of predictability in showing the reasonable expectation of success. *In re Rinehart*, 189 USPQ 143 (CCPA 1976); MPEP §2143.03.

Notwithstanding the aforementioned amendments, which were made in response to the rejections under 35 U.S.C. §112, first and second paragraphs, Applicant submits that no amendment is necessary to overcome this obviousness rejection in view of Resnick, and that any such amendment is not intended to narrow the scope of the invention for purposes of traversing this obviousness rejection.

The Examiner alleges that Resnick teaches the claimed invention including,

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"... carrying out the calibration *by an expression chosen to express the emission rate of radiation in which the logarithm of the value of the emission rate is a second-order polynomial function of the heating current and a first-order polynomial function of the voltage.*"

by looking to Resnick at column 4, lines 31-61, and at column 7, lines 13-60, by alleging that damping functions are known to be represented by a second order polynomial equation, and by alleging that exponential functions are also known to be the inverse of logarithms to base "e", and that logarithms are used to create graphical representations that are linear in nature and are more easily read from a graph than exponential curves. Paper 042605, page 4.

Applicant respectfully disagrees that Resnick teaches each and every element of the claimed invention in such a manner that the end result will perform as the claimed invention performs.

At the outset, Applicant notes that the Examiner agrees that "the use of two damping functions, as claimed (with reference to Claims 3 and 4), is not suggested by the prior art of record." Paper 042605, page 5.

Secondly, and in view of the Examiner's comment that "logarithms are used to create graphical *representations* that are linear in nature and are *more easily read from a graph* than exponential curves" (emphasis added), Applicant submits that the claimed invention is not directed merely to the use of logarithms for creating a graphical representation, but to the relationship where the logarithm of the value of the emission rate is *a function of* a second-order polynomial function of the heating current *and* a first-order polynomial function of the voltage.

Here, Applicant claims a logarithmic functional relationship, not merely a graphical representation of a functional relationship in terms of a logarithmic display.

Also, Applicant claims **"...a second-order polynomial function of the heating current and a first-order polynomial function of the voltage"**, which recites two functions in the conjunctive.

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As best understood by Applicant, it appears that the Examiner alleges obviousness by equating a logarithmic graphical representation to a logarithmic function, but also agrees that the prior art of record does not teach two damping functions.

Applicant respectfully disagrees that the prior art of record teaches each and every element of the claimed invention, and more particularly submits that Resnick does not teach,

"... carrying out the calibration by an expression chosen to express the emission rate of radiation in which the logarithm of the value of the emission rate is a second-order polynomial function of the heating current and a first-order polynomial function of the voltage", which is a recitation of a logarithmic functional relationship involving two functions, and not a recitation of a logarithmic functional relationship involving one function coupled with a logarithmic graphical representation of another function.

Furthermore, at column 4, lines 31-61, Applicant finds Resnick to teach a filament current signal which varies in accordance with the known exponential relationship *between the tube and filament currents*.

At column 7, lines 13-60, Applicant finds Resnick to teach a damping means 10 that damps changes in the filament current such that *the filament current changes* at about the heating rate of the filament.

In comparing Resnick with the instant invention, Applicant finds Resnick to be absent any teaching of the emission rate of radiation being expressed in such a manner where the logarithm value of the emission rate is a function of *a second-order polynomial function of the heating current*, AND the logarithm value of the emission rate is a function of *a first-order polynomial function of the voltage*.

While Applicant agrees that Resnick teaches a relationship between the tube current and the filament current, and teaches a damping means that changes the filament current, Applicant submits that Resnick does not teach *"... carrying out the calibration by an expression chosen to express the emission rate of radiation in which the logarithm of the value of the emission rate is a second-order polynomial function of the heating*

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current and a first-order polynomial function of the voltage", which is specifically claimed for in the instant invention.

Accordingly, Applicant submits that Resnick does not teach a method that performs as the claimed invention performs.

In view of the foregoing, Applicant submits that Resnick fails to teach or suggest each and every element of the claimed invention and is therefore wholly inadequate in its teaching of the claimed invention as a whole, fails to motivate one skilled in the art to do what the patent Applicant has done, fails to offer any reasonable expectation of success in using Resnick to perform as the claimed invention performs, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

Regarding Allowable Subject Matter

The Examiner comments that Claims 3 and 4 would be allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph, and to include all of the limitations of the base claim and any intervening claims.

At Examiner's paragraph 14 (Paper 042605, page 5), the Examiner comments that the reasons for the indication of allowable subject matter is that "the use of two damping functions, as claimed, is not suggested by the prior art of record."

While Applicant thanks the Examiner for the indication of allowable subject matter, Applicant respectfully submits that Claims 1, 12 and 13 are also allowable at least for the same reasons, as Claims 1, 12 and 13 recite an emission rate of radiation being expressed in such a manner where the logarithm value of the emission rate is a function of a second-order polynomial function of the heating current, AND the logarithm value of the emission rate is a function of a first-order polynomial function of the voltage. Hence, two functions are claimed, which the Examiner agrees is not suggested by the prior art of record.

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In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 50-2513.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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